

Puccinellia proves its place

At Arthurville, in the Central West, puccinellia is proving its worth in reclaiming a highly saline site. And, to a certain extent, baffling the experts.

On most New South Wales sites, tall wheatgrass has proven the dominant salt-tolerant grass but for Bernard Sheridan, puccinellia is working well.

With a mixed farming system based on lucerne and clover pastures, wool and prime lambs together with minimum till cereal cropping, Bernard aims to maximise production and return his saline site to its previous state. He talked with Matthew Crosbie.

“Back in the 1960s the sheep used to like camping on this salty area. Then it was the size of a tennis court which grew to two or three courts by the early ‘90s, and by 2000 it expanded quickly over summer to be the present size of five acres.

It grew by three to four times in one year and that was during a drought — just like a tap was turned on. The patch wasn’t too bad, then all of a sudden right in the middle of a drought, the trees around and above here all died.

I asked the local salinity expert how far out we should put a fence around the area and he picked up a rock and threw it as far as he could — ‘about that far’ he said. That’s fine, but I want to keep as much production as I can — I want this area eventually to look just the same as the rest of the country.

In the end we fenced not too far out from the highly saline area and a couple of years ago, where the salt wasn’t too bad, we planted Aurora lucerne, Australian phalaris, Antaz clover and cocksfoot.

Case study: Bernard Sheridan

Location: Merindah, Arthurville, Central West NSW

Property size: 620 ha

Mean annual rainfall: 500 mm

Enterprises: Merino ewes joined to Poll Dorset rams; cereal cropping; lucerne/clover pastures



Photo: M Crosbie

Bernard Sheridan and neighbour Trevor Owens on an area once a salt scald, now thriving with puccinellia

On the highly saline area we went in with a shotgun mix of Salado lucerne, Paradana balansa, Pioneer Rhodes grass, puccinellia, Palestine clover and Australian phalaris plus tall wheatgrass.

I planted about 650 trees in the area, which are now looking magnificent. The idea is that the saline area will be ideal for lambing ewes with the shelter and feed.

The salt survivors

On the more saline ground the puccinellia and tall wheatgrass have been the real survivors. Everybody that has looked at this site can’t believe the puccinellia. Apparently it doesn’t usually grow well in NSW, although it does well in South Australia. I’ve read in this magazine that some SA salt areas are sown as a monoculture of puccinellia, and they manage good animal production from them.

Wherever there is moisture the puccinellia is thriving, but where there is no moisture there is no puccinellia — but now the tall wheatgrass is going really well. Where there was a bare patch of dirt, tall wheatgrass is now growing, which is good for the salt, but doesn’t look so good for production.

I’m not so sure about these ‘harder’ looking grasses like tall wheatgrass and even phalaris — I’m keen on plants which will fatten stock.

But if I can get the groundcover on this salty area, it will mulch the ground and once there is enough groundcover, I believe I will be able to grow better, more productive pastures.

You’ve got to make every acre productive — trees don’t make much money in this landscape. I’m keen on planting trees for shade individually or in blocks in the middle of paddocks, but along fencelines

Key points

- Puccinellia thriving in highly saline area
- Saltland brought back into production
- Success might come where you least expect it.

— that's a major problem in terms of fencing, as limbs drop off.

It's the same with saltbush — I won't have it on my place. I'm sure it's a good plant in its environment, but it's really advertising that you have a salinity problem and I can't see that it is a plant which will fatten stock.

I want to be able to grow lucerne and clover on this salty area in a few years time so that it looks no different to the rest of the farm.

Already it's gone from a bare patch to a paddock that's got great cover and mulch — I can't believe what's happened here.

It's a haystack — better than irrigation.

If you came to buy this place five to ten years ago and I put a price of, say, \$1000 an acre on it, with the salinity you'd say I was crazy. But now if I took people down here, nobody would worry about the salinity problem — I've increased the value of my place and the area is back to making me money.

I wouldn't hesitate buying a place with salt now after seeing what I've been able to achieve here.

On the rest of the place I concentrate on the stock, running pastures of Aurora



Photo: M Crosbie

Direct drilled lucerne on Merindah

lucerne and Antaz clover, usually established under a light crop.

We grow wheat for grain and dual purpose winter wheat which is all direct drilled. All the cropping is contract sown — I'd rather have the machinery money in another mob of ewes."

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The science behind the story

By Luke Beange

It is great to see the success Bernard has had on the site considering what it was like. That success is due in no small part to his careful grazing management, nursing the pasture along by hardly grazing it in the first few seasons. Consequently he got magnificent seed set, which has meant recruitment of new seedlings and a seed bank for future years.

The site would ideally be kept lightly grazed as required, for a few reasons. Firstly, to keep the grass in the actively growing phase so it is pumping water. Secondly, to allow light and space into the canopy to encourage recruitment of more seedlings. And thirdly, to keep individual plants from becoming giants that crowd out all others and go rank and unproductive in the last phase of growth — the problem Bernard has found with tall wheatgrass.

It is very encouraging to see the pasture still performing so well despite the drought seasons. Presumably a high water table, albeit salty, has helped this survival. Having a pasture that can perform in a salty situation certainly makes all the difference in being able to rehabilitate areas that are worrying due to scalding.

It is also interesting to see one species (puccinellia) dominate despite several species being sown, including tall wheatgrass. While puccinellia has been extremely successful on saline sites in SA, it is something of a rarity for it to flourish in NSW. From my observations, puccinellia seems to favour sites that are wetter for longer.

The Arthurville site is not only very salty in places but is also relatively damp and there are not many sites like that in NSW. It appears puccinellia is not as competitive with other salt-tolerant plants when grown

on a site lacking the right combination of wet ground and high salinity levels.

In drier saline sites, which are the case in most of NSW, tall wheatgrass dominates.

NSW DPI is studying SGSL sites, including Bernard's, to better understand why different species favour different sites.

However, we do know there is extreme variation across our NSW salt sites, so we still recommend people use a 'shotgun' mix of salt-tolerant species so each species will fill a particular niche on the site.

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